Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL GUIDELINE CLEARINGHOUSE

General

Guideline Title

Treatment of female pattern hair loss in primary care.

Bibliographic Source(s)

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program. Treatment of female pattern hair loss in primary care. Austin (TX): University of Texas at Austin, School of Nursing; 2011 May. 23 p. [32 references]

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

Strength of recommendations (A, B, C, D, I) and quality of evidence (good, fair, poor) are defined at the end of the "Major Recommendations" field.

Pharmacological Therapy

The only medication approved by the Food and Drug Administration (FDA) for female pattern hair loss (FPHL) is minoxidil 2% applied topically to the scalp.

Minoxidil 2% Solution

Minoxidil 2% is shown to be significantly more effective than placebo. It has been shown to reduce hair loss and induce new hair growth in females with FPHL consistently. (Cole, 2010; Lucky et al., 2004; Mousney & Reed, 2009; Olsen et al., 2005; Shrivastava, 2009) Grade B, Fair Evidence

Female pattern hair loss needs further research; however there are several landmark studies and studies showing good and fair evidence for the treatment of FPHL with minoxidil 1%-5%. The mechanism of minoxidil is unknown, but its proven efficacy remains. Minoxidil is proven to work in FPHL both with and without hyperandrogenism and in pre and postmenopausal women alike. (Lucky et al., 2004; Messenger & Rundegren, 2004; Mousney & Reed, 2009; Olsen et al., 2005; Shrivastava, 2009; Tsuboi et al., 2007) Grade B, Fair Evidence

Minoxidil 2%, Minoxidil 5%

Both 2% and 5% minoxidil are statistically superior to placebo, but 5% minoxidil was unable to consistently demonstrate an enhanced efficacy to 2% minoxidil. In a few small studies 5% minoxidil was superior to the 2% minoxidil. The 5% minoxidil did have an increased rate of scalp irritation,

pruritus, and hypertrichosis. Both consistently showed moderate to dense hair re-growth. (Mousney & Reed, 2009; Lucky et al., 2004; Olsen et al., 2005) Grade A, Good Evidence

Minoxidil Treatment Application

- For external use only. Apply 1 ml with dropper 2 times a day directly onto the scalp in the hair loss area. (Mousney & Reed, 2009; CVS Pharmacy, 2009)
- Using more or more often will not improve results. (CVS Pharmacy, 2009)
- Continued use is necessary to increase and keep your hair re-growth, or hair loss will begin again. (CVS Pharmacy, 2009)
- It takes time to re-grow hair. You may need to use minoxidil 2 times a day for at least 4 months before results are seen. (CVS Pharmacy, 2009)
- Do not apply on other parts of the body. (CVS Pharmacy, 2009)
- Wash hands after application. (CVS Pharmacy, 2009)
- Avoid contact with the eyes. In case of accidental contact, rinse eyes with large amounts of cool tap water. (CVS Pharmacy, 2009)
- Continue treatment for 12 months to determine efficacy. (Olsen et al., 2005)

The following therapies are not FDA approved for treatment of FPHL.

Minoxidil and Spironolactone

A case study demonstrated that when FPHL was treated with spironolactone 200 mg, it plateaued at 24 months. Twice daily therapy with 5% minoxidil was then introduced and further re-growth documented, confirming the additive effect of the combination therapy. A literature review found little evidence for the combination therapy. (Hoedemaker, Egmond, & Sinclair, 2007) Grade I, Poor Evidence

Minoxidil and Finasteride

No studies in women have been completed with this combination therapy. In men it is proven to be a Grade A recommendation, but in females it is not studied as a combination therapy because of the safety issues. Grade I, Poor Evidence

Finasteride

Study results are mixed, and objective evidence of efficacy is limited. Experts recommend that finasteride 2.5mg-5mg/d may be used in patients who fail minoxidil treatment. Few adverse reactions have been reported in women receiving finasteride. Finasteride is pregnancy category X and should not be used or even handled by women who are pregnant or may become pregnant. (Rogers & Avram, 2008; Iorizzo et al., 2006; Kohler et al., 2007; Stout & Stumpf, 2010; Yeon et al., 2011; Mounsey & Reed, 2009; Dinh & Sinclair, 2007) Grade I, Poor Evidence

Other Antiandrogen Therapies

Spironolactone

A usual daily dose of 100 mg-200 mg is widely used to treat FPHL, but published studies supporting its efficacy are limited and lack both randomization and control. Side effects are varied, and include postural hypotension, electrolyte disturbances, menstrual irregularities, fatigue, urticarial, breast tenderness and hematologic disturbances. (Mounsey & Reed, 2009; Rogers & Avram, 2008; Rathnayake & Sinclair, 2010; Sinclair, Wewerinke, & Jolley, 2005; Dinh & Sinclair, 2007) Grade I, Poor Evidence

Drospirenone

Experts recommend that women with evidence of a hyperandrogenic state would benefit from using antiandrogenic progesterones such as drospirenone, but studies demonstrating its effectiveness in FPHL are lacking (Mounsey & Reed, 2009) Grade I, Poor Evidence

Non-Pharmacological Therapy (Botanical Products)

Raspberry Ketone (RK) 0.01%

A study showed that topical application of RK enhances hair growth by increase dermal insulin-like growth factor-1 in mice. Also, another study demonstrated that daily topical application of RK 0.01% promotes hair growth in five from ten volunteers after five months of use. (Abdullah & Rashid, 2010) Grade D, Poor Evidence

Procyanidin B-2 1%

A double-blinded study involving a total of 29 subjects who used procyanidin B-2 1% daily for six months showed that procyanidin B-2 1% can

promote hair growth and increase the numbers of total and terminal hair. (Abdullah & Rashid, 2010) Grade C, Fair Evidence

*Both RK 0.01% and procyanidin B-2 1% have shown some beneficial effects to alopecia, yet these studies are not well controlled and lack large scientific studies. Furthermore, many botanicals have no standardization and are not FDA approved for FPHL. It may be considered for an adjuvant treatment of FPHL only in certain patient populations. (Abdullah & Rashid, 2010)

Non-Invasive Cosmetics

Camouflaging

Camouflaging products such as hair building fibers, scalp spray thickeners, alopecia masking lotion, and topical shading should be recommended for mild to moderate FPHL. They can cover exposed areas on the scalp and hide visible hair loss and also are compatible with topical minoxidil. (Dinh & Sinclair, 2007) Grade I, Poor Evidence

Hair-Styling

Various hairstyling options such as hair sprays, lotions, and tinted powders can make hair look thicker, with more volume and fullness. (Dinh & Sinclair, 2007) Grade I, Poor Evidence

Hair Replacement

Extensions are used for women with mild FPHL who simply desire more length and volume. It can be attached permanently or clipped on daily. Women who have moderate or severe FPHL may need an integration which can be blended with natural hair from the thinning area, therefore enhancing the volume of hair. The adverse effects of integration are scalp irritation, stress to existing hair, and hair damage. Additionally, wigs can be used for those with very fragile hair and extensive FPHL. The wig can be matched to existing scalp tone, hair texture and hair color. There are no restrictions or side effects with wigs. (Dinh & Sinclair, 2007) Grade I, Poor Evidence

Hair Accessories

A variety of hair decorations are available on the market, and include hats, scarves, bandanas, turbans. These accessories can satisfactorily cover localized or diffused patches of hair loss. (Dinh & Sinclair, 2007) Grade I, Poor Evidence

Nutrition

Vitamins, proteins, and minerals are required for optimum hair growth and adequate nutrition is essential to maintain a healthy hair cycle. Grade I, Poor Evidence

Counseling/Education

Patient education is key in the management of FPHL. It is important to educate the patient about the normal hair cycle and help the patient to identify triggers that may potentially relate to FPHL. (Trueb, 2008) Grade I, Poor Evidence

Psychosocial Support

Psychological distress such as low self-esteem, poor body image, feelings of guilt, and poor quality of life resulting from FPHL needs to be addressed in the management regimen. Health professionals should recognize the psychological impact of FPHL and proactively provide psychological support that is essential to relieve patient anxiety or fear of hair loss. (Trueb, 2008; Dinh & Sinclair, 2007) Grade I, Poor Evidence

Referrals

Patients not satisfied with medicinal treatment options offered at the primary care level should be referred to a surgical hair restoration specialist for consultation/evaluation. (Leavitt, 2008; Avram & Rogers, "Contemporary," 2009; Dinh & Sinclair, 2007) Grade C, Fair Evidence

Patients not satisfied with medicinal treatment options offered at the primary care level who are not interested in surgical hair restoration interventions should be referred to a laser specialty center specializing in hair restoration. (Avram & Rogers, "The use of low-level light," 2009; Mahyar, 2010; Satino & Markou, 2003; Leavitt et al., 2009) Grade I, Poor Evidence

Definitions:

Strength of Recommendation (Based on U.S. Preventive Services Task Force [USPSTF] Ratings)

A. The USPSTF strongly recommends that clinicians provide the service to eligible patients. *The USPSTF found good evidence that the service*

improves important health outcomes and concludes that benefits substantially outweigh harms.

B. The USPSTF recommends that clinicians provide the service to eligible patients. *The USPSTF found at least fair evidence that the service improves important health outcomes and concludes that benefits outweigh harms.*

C. The USPSTF makes no recommendation for or against routine provision of the service. *The USPSTF found at least fair evidence that the service can improve health outcomes but concludes that the balance of benefits and harms is too close to justify a general recommendation.*

D. The USPSTF recommends against routinely providing the service to asymptomatic patients. *The USPSTF found at least fair evidence that the service is ineffective or that harms outweigh benefits.*

I. The USPSTF concludes that the evidence is insufficient to recommend for or against routinely providing the service. *Evidence that the service is effective is lacking, of poor quality, or conflicting and the balance of benefits and harms cannot be determined.*

Quality of Evidence (Based on USPSTF Ratings)

The USPSTF grades the quality of the overall evidence for a service on a 3-point scale (good, fair, poor).

Good: Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes.

Fair: Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies, generalizability to routine practice, or indirect nature of the evidence on health outcomes.

Poor: Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Female pattern hair loss

Guideline Category

Management

Treatment

Clinical Specialty

Dermatology

Endocrinology

Family Practice

Geriatrics

Internal Medicine

Nursing

Intended Users

Advanced Practice Nurses

Nurses

Patients

Pharmacists

Physician Assistants

Physicians

Guideline Objective(s)

- To identify treatment of female pattern hair loss in non-pregnant adult women
- To assist primary care providers in providing appropriate treatment for hair loss in adult females

Target Population

Adult, non-pregnant women ages 18 and older with female pattern hair loss

Note: This guideline is not intended for treatment of other types of hair loss in women or for pregnant women, males, or pediatric patients

Interventions and Practices Considered

Treatment/Management

1. Pharmacological options
    - Minoxidil 2%-5%
    - Spironolactone
    - Drospirenone
    - Finasteride (Propecia)
    - Combination treatments of minoxidil and spironolactone
    - Combination treatments of minoxidil and finasteride (Propecia)
2. Non-pharmacological options (botanicals)
    - Raspberry ketone 0.01%
    - Procyanidin B-2 1%
3. Non-invasive cosmetics
    - Camouflaging products
    - Hairstyling
    - Hair accessories
4. Counseling/education
    - Psychosocial support
    - Nutrition
5. Referral for surgical/laser/transplant therapy

Major Outcomes Considered

- Quality of life, self-esteem, and mood
- New hair growth

- Cessation of hair loss
- Hair density pattern
- Side effects of treatment

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

PubMed; CINAHL; Medline Plus; British Journal of Dermatology; Wiley; Indian Journal of Dermatology, Venerology, and Leprology; Journal of the American Academy of Dermatology; American Academy of Family Physicians; European Journal of Dermatology; The Australian College of Dermatologists; EBSCOHost

Keyword Search

Hair loss treatment, female pattern hair loss treatment, hair restoration, nutrition, quality of life, androgenetic alopecia

Inclusions: Female gender, age 18 and older, English language, peer reviewed, scholarly journals

Exclusions: Male gender, pediatric population, pregnancy or possible pregnancy, evaluation and diagnosis of hair loss

Number of Source Documents

32

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

The U.S. Preventive Services Task Force (USPSTF) grades the quality of the overall evidence on a 3-point scale (good, fair, poor).

Good: Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes.

Fair: Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies, generalizability to routine practice, or indirect nature of the evidence on health outcomes.

Poor: Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

Methods Used to Analyze the Evidence

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Informal Consensus

Description of Methods Used to Formulate the Recommendations

This guideline is the result of extensive review and synthesis by expert clinicians. A draft of the guideline was developed by a group of family nurse practitioner (FNP) students and submitted for review.

Rating Scheme for the Strength of the Recommendations

The U.S. Preventive Services Task Force (USPSTF) grades its recommendations according to one of five classifications (A, B, C, D, I) reflecting the strength of evidence and magnitude of net benefit (benefits minus harms).

A. The USPSTF strongly recommends that clinicians provide the service to eligible patients. *The USPSTF found good evidence that the service improves important health outcomes and concludes that benefits substantially outweigh harms.*

B. The USPSTF recommends that clinicians provide the service to eligible patients. *The USPSTF found at least fair evidence that the service improves important health outcomes and concludes that benefits outweigh harms.*

C. The USPSTF makes no recommendation for or against routine provision of the service. *The USPSTF found at least fair evidence that the service can improve health outcomes but concludes that the balance of benefits and harms is too close to justify a general recommendation.*

D. The USPSTF recommends against routinely providing the service to asymptomatic patients. *The USPSTF found at least fair evidence that the service is ineffective or that harms outweigh benefits.*

I. The USPSTF concludes that the evidence is insufficient to recommend for or against routinely providing the service. *Evidence that the service is effective is lacking, of poor quality, or conflicting and the balance of benefits and harms cannot be determined.*

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

A draft of the guideline was submitted for review to the family nurse practitioner (FNP) program faculty and two external expert reviewers. Revisions were made after recommendations were received.

Evidence Supporting the Recommendations

References Supporting the Recommendations

Abdullah F, Rashid RM. Alopecia: botanical approaches in review. J Drugs Dermatol. 2010 May;9(5):537-41. [14 references] PubMed

Avram M, Rogers N. Contemporary hair transplantation. Dermatol Surg. 2009 Nov;35(11):1705-19. [39 references] PubMed

Avram MR, Rogers NE. The use of low-level light for hair growth: part I. J Cosmet Laser Ther. 2009 Jun;11(2):110-7. PubMed

Cole G. Female pattern baldness. [internet]. MedlinePlus; 2010 [accessed 2011 Feb 11].

CVS Pharmacy. Current medication information. Hair regrowth (minoxidil) solution. [internet]. Daily Med; 2009 [accessed 2011 Feb 18].

Dinh QQ, Sinclair R. Female pattern hair loss: current treatment concepts. Clin Interv Aging. 2007;2(2):189-99. [49 references] PubMed

Ghanaat M. Types of hair loss and treatment options, including the novel low-level light therapy and its proposed mechanism. South Med J. 2010 Sep;103(9):917-21. [38 references] PubMed

Hoedemaker C, van Egmond S, Sinclair R. Treatment of female pattern hair loss with a combination of spironolactone and minoxidil. Australas J Dermatol. 2007 Feb;48(1):43-5. PubMed

Iorizzo M, Vincenzi C, Voudouris S, Piraccini BM, Tosti A. Finasteride treatment of female pattern hair loss. Arch Dermatol. 2006 Mar;142(3):298-302. PubMed

Kohler C, Tschumi K, Bodmer C, Schneiter M, Birkhaeuser M. Effect of finasteride 5 mg (Proscar) on acne and alopecia in female patients with normal serum levels of free testosterone. Gynecol Endocrinol. 2007 Mar;23(3):142-5. PubMed

Leavitt M, Charles G, Heyman E, Michaels D. HairMax LaserComb laser phototherapy device in the treatment of male androgenetic alopecia: A randomized, double-blind, sham device-controlled, multicentre trial. Clin Drug Investig. 2009;29(5):283-92. PubMed

Leavitt M. Understanding and management of female pattern alopecia. Facial Plast Surg. 2008 Nov;24(4):414-27. PubMed

Lucky AW, Piacquadio DJ, Ditre CM, Dunlap F, Kantor I, Pandya AG, Savin RC, Tharp MD. A randomized, placebo-controlled trial of 5% and 2% topical minoxidil solutions in the treatment of female pattern hair loss. J Am Acad Dermatol. 2004 Apr;50(4):541-53. PubMed

Messenger AG, Rundegren J. Minoxidil: mechanisms of action on hair growth. Br J Dermatol. 2004 Feb;150(2):186-94. [66 references] PubMed

Mounsey AL, Reed SW. Diagnosing and treating hair loss. Am Fam Physician. 2009 Aug 15;80(4):356-62. [42 references] PubMed

Olsen EA, Messenger AG, Shapiro J, Bergfeld WF, Hordinsky MK, Roberts JL, Stough D, Washenik K, Whiting DA. Evaluation and treatment of male and female pattern hair loss. J Am Acad Dermatol. 2005 Feb;52(2):301-11. PubMed

Rathnayake D, Sinclair R. Innovative use of spironolactone as an antiandrogen in the treatment of female pattern hair loss. Dermatol Clin. 2010 Jul;28(3):611-8. PubMed

Rogers NE, Avram MR. Medical treatments for male and female pattern hair loss. J Am Acad Dermatol. 2008 Oct;59(4):547-66; quiz 567-8. [193 references] PubMed

Satino JL, Markou M. Hair regrowth and hair tensile strength using the hairmax lasercomb for low-level laser therapy. Int J Cosmet Surg Aesthetic Dermatol. 2003;5(2):113-7.

Shrivastava SB. Diffuse hair loss in an adult female: approach to diagnosis and management. Indian J Dermatol Venereol Leprol. 2009 Jan-Feb;75(1):20-7; quiz 27-8. [61 references] PubMed

Sinclair R, Wewerinke M, Jolley D. Treatment of female pattern hair loss with oral antiandrogens. Br J Dermatol. 2005 Mar;152(3):466-73. PubMed

Stout SM, Stumpf JL. Finasteride treatment of hair loss in women. Ann Pharmacother. 2010 Jun;44(6):1090-7. [33 references] PubMed

Trueb RM. Systematic approach to hair loss in women. J Dtsch Dermatol Ges. 2010 Apr;8(4):284-97, 284-98. PubMed

Tsuboi R, Tanaka T, Nishikawa T, Ueki R, Yamada H, Katsuoka K, Ogawa H, Takeda K. A randomized, placebo-controlled trial of 1% topical minoxidil solution in the treatment of androgenetic alopecia in Japanese women. Eur J Dermatol. 2007 Jan-Feb;17(1):37-44. PubMed

Yeon JH, Jung JY, Choi JW, Kim BJ, Youn SW, Park KC, Huh CH. 5 mg/day finasteride treatment for normoandrogenic Asian women with female pattern hair loss. J Eur Acad Dermatol Venereol. 2011 Feb;25(2):211-4. PubMed

Type of Evidence Supporting the Recommendations

The type of supporting evidence is specifically stated for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Improved self-esteem and quality of life, increased hair growth, lack of continued hair loss

Potential Harms

- Itching, red, irritated scalp, as well as hypertrichosis with use of minoxidil. When using minoxidil, caution should be used with severe renal impairment.
- Postural hypotension, electrolyte disturbances, menstrual irregularities, fatigue, urticarial, breast tenderness and hematologic disturbances may be seen with the use of spironolactone.
- Finasteride is pregnancy category X and should not be used or even handled by women who are pregnant or may become pregnant. Potential harms of this medication being used by women who are pregnant could be possible feminization of the male fetus.

Contraindications

Contraindications

- Finasteride and spironolactone should not be used in pregnant women or women who may become pregnant (i.e., women not on strict birth control measures).
- For all pharmacologic treatments mentioned, the medications should not be used in persons who have a drug allergy or sensitivity.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program. Treatment of female pattern hair loss in primary care. Austin (TX): University of Texas at Austin, School of Nursing; 2011 May. 23 p. [32 references]

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2011 May

Guideline Developer(s)

University of Texas at Austin School of Nursing, Family Nurse Practitioner Program - Academic Institution

Source(s) of Funding

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program

Guideline Committee

Practice Guidelines Committee

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Financial Disclosures/Conflicts of Interest

Not stated

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Electronic copies: Request at fsonstein@mail.nur.utexas.edu

Print copies: Available from the University of Texas at Austin, School of Nursing. 1700 Red River, Austin, Texas, 78701-1499, Attn: Nurse Practitioner Program

Availability of Companion Documents

None available

Patient Resources

None available

NGC Status

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